Weekly Summary Report
USEPA Oversight, Sauget Area 2, Sauget, IL
WA No. 224-RXBF-05XX / Contract No. 68-W6-0025

Week Ending Friday, February 4, 2005

This report summarizes the Interim Remedial Action (IRA) work conducted by Solutia and its contractors from January 31, 2005 through February 4, 2005 at Site R, Sauget Area 2. Ongoing IRA fieldwork consists of site grading and stormwater management. Additional activities completed during the week included completion of the barrier wall cap and installation of actuator valves in the extraction well vaults associated with the Groundwater Migration Control System (GMCS).

Contractors Onsite

Philip Services Corporation (PSC) (contractor for earthwork/stormwater management)
Rock Hill Mechanical (RHM) (process plumbing contractor for installing new actuator valves)
URS (primary consultant for Solutia)

Work Performed This Week

Site activities during the reporting period included site grading and stormwater management. The construction of the last 75 feet of the barrier wall cap was completed, and new automatically-controllable valves were installed in the vaults at each of the three extraction wells. Site grading activities, stormwater management, and slurry stabilization are expected continue as the main site activities during the upcoming week.

Groundwater Migration Control System (GMCS)

The river elevation continued a slight decrease during the week, dropping from 391.3 feet above mean sea level (amsl) on January 31 to 389.4 feet amsl on February 7. Between January 31 and February 2, the GMCS system operated automatically following the logic described in previous weekly summary reports. On February 2, the three extraction well pumps were switched off to facilitate the replacement of valves inside the extraction well vaults. These valves connect the pumps to the discharge pipeline that conveys pumped groundwater to the American Bottoms Regional Treatment Facility (ABRTF).

GMCS pumping resumed on February 4, with extraction wells EW-2 and EW-3 pumping automatically based on the delta values measured at the piezometer pairs P2 and P4, respectively. The EW-1 pump was manually switched to a maximum pumping rate on February 4 in an attempt to achieve a compliant delta value at the P2 piezometer pair. (During a weekly teleconference with USEPA and IEPA on February 1, Solutia agreed to increase the pumping rate in EW-1 in order to bring the P2 piezometer pair into compliance with the Record of Decision [ROD] criteria for the GMCS). The combined system flow rate was approximately 1,740 gallons per minute (gpm) at 9:00 AM on February 7.

Eight barrier wall piezometers, with four inside and four outside the barrier wall alignment, monitored the groundwater elevations adjacent to the barrier wall alignment during the week.

Table 1 shows the river and piezometer water elevations measured at 9:00 AM on February 7, 2005.

Installation of Actuator Valves at Extraction Wells

RHM installed new actuator valves for each of the three extraction wells during the reporting period. The valves were installed in order to provide an electronically-controllable mechanism to physically reduce the flow at each well. The valves are designed to allow each pump to maintain lower pumping flow rates than were previously possible.

The old valves removed at each extraction well showed considerable degradation and wear on the inside seat end of the valve. The new valves were installed with new gaskets and placed in line with the seat end of the valve in the opposite direction as the old valves (i.e., seat end towards American Bottoms Regional Treatment Facility [ABRTF]).

TABLE 1
River and Piezometer Water Elevations – January 30, 2005 (09:00 AM)

	Elevation Outside Barrier Wall (ft above mean sea level)	Elevation Inside Barrier Wall (ft above mean sea level)	Delta (ft)
River Level	389.43		
Piezometer pair 1N (northern-most)	390.47	386.30	**-4.17**
Piezometer pair 2W (north-central)	388.51	388.49	**-0.02**
Piezometer pair 3W (south-central)	388.70	388.12	**-0.58**
Piezometer pair 4W (southern-most)	390.31	389.76	**-0.55**

Notes:
Piezometers located outside the barrier wall consist of P1N, P2W, P3W, and P4W. Piezometers located inside the barrier wall consist of P1S, P2E, P3E, and P4E.

The term "delta" refers to the gradient across the barrier wall as measured by the groundwater head difference at each piezometer pair. "Negative delta" values correspond to an inward groundwater gradient, toward Site R, when water levels are observed to be lower in the piezometer located inside the barrier wall. Conversely, "positive delta" values refer to an outward groundwater gradient across the barrier wall, toward the river.

ROD Performance Metrics (Gradient Across the Barrier Wall)

Between January 31 and February 2, each of the four piezometer pairs generally showed water levels equivalent or lower on the inside of barrier wall compared to piezometers on the outside of the barrier wall (equivalent or negative delta values). Subsequently, in correlation with the shut-down of the extraction well pumps, the gradient reversed to an outward gradient at each of the four piezometer pairs (positive delta values). The delta values prior to restarting the GMCS on February 4, ranged approximately from 2 feet (P1 pair) to 10 feet (P2 pair), indicating a significant outward groundwater gradient across the barrier wall, towards the river, when the extraction well pumps were not operating.

Within roughly 12 hours of the pumps restarting on February 4, piezometer pairs P1, P3, and P4 displayed an inward gradient. Piezometer pair P2 was more slowly influenced, and by February 6, the water levels at the two piezometers were approximately equivalent inside and outside the barrier wall.

FFS Performance Metrics (Gradient Between Inside Wall Piezometers and River)

Prior to the shut-down of the GMCS on February 2, each of the four piezometers located inside the barrier wall showed groundwater elevations lower than the Mississippi River elevation, indicating an inward gradient toward Site R. The gradient was reversed at all four piezometers while the system was not pumping, but an inward gradient was resumed by February 5 as reported by water levels at inside piezometers P1S, P2E, and P3E. Piezometer P4E continued to maintain a water level approximately 1 foot higher than the river elevation for the remainder of the reporting period.

Barrier Wall Cap Construction and Site Grading

Barrier wall cap was completed on February 1, with the remaining 75 feet of cap between station 25+25 and 26+00 constructed. Site grading activities continued during the week, with consolidation and management of the wettest spoils (approximately between EW-1 and EW-2).

Slurry

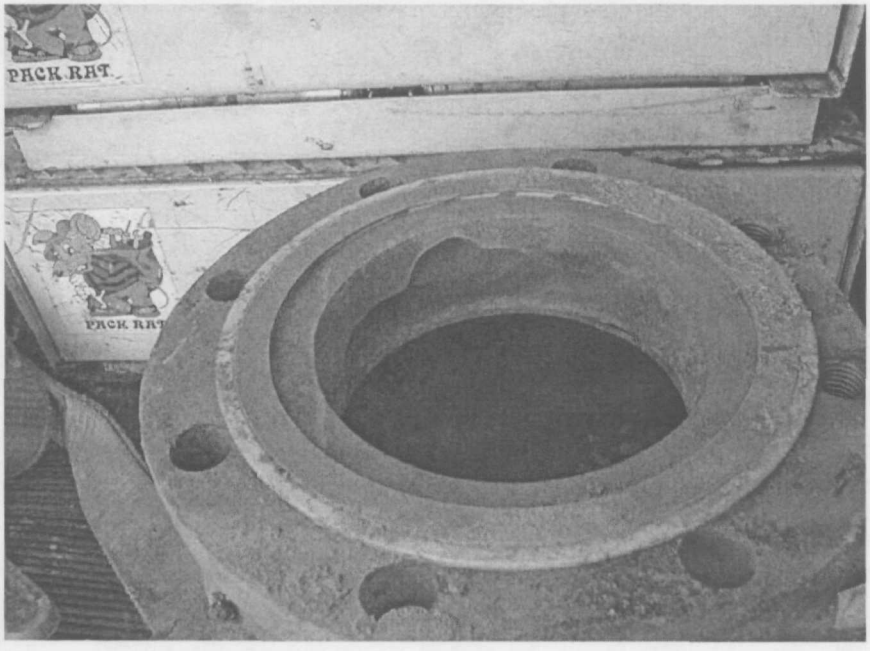
No slurry stabilization operations occurred during the reporting period. Equipment necessary for slurry stabilization will be mobilized to the site during the upcoming week.

Stormwater

Stormwater from across the remaining exclusion zone at Site R was pumped from ponded areas to the modutanks during the week.

Photos for the week ending February 4, 2005

Rough site grading and cleanup between EW-1 and EW-2. (February 2, 2005)



Valve removed from EW-3 showed signed of abrasion, with a visible hole next to the seal. (February 3, 2005)